

Abstract

A wavelength stabilizing apparatus utilized in an optical communication system for controlling a light wave output from a tunable optical component is disclosed. The wavelength stabilizing apparatus includes a coarse-tuning element, a fine-tuning element, and a servo element. When the wavelength stabilizing apparatus is used, the light wave output from the tunable optical component is directed into the coarse-tuning element and the fine-tuning element, respectively, and then transformed into electric signals to be received by the servo element. Particularly, the electric signals from the coarse-tuning element are served as basis for coarse-tuning and channel recognition of the light wave output from the tunable optical component while the electric signals from the fine-tuning element are served for fine-tuning and servo control of the light wave output from the tunable optical component. These electric signals are also processed with a logical operation to obtain a control signal for controlling the tunable optical component.